Robert W. Michaels

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Education

Ph.D. Yale University, 1989.

M.S, M.Phil. Yale University, 1982

B.S. Physics, Texas A&M University, 1981, *Summa Cum Laude*

Research Experience

currently Senior Staff Scientist — 1993–present
Thomas Jefferson National Accelerator Facility — Newport News, VA
Experimental nuclear physics with weak and electromagnetic electron scattering.

Postdoc — 1989-1993
Max Planck Institute for Nuclear Physics — Heidelberg, Germany
Experimental particle physics at the CERN hyperon beam expt. WA89.

Graduate Student Research Associate — 1983-1989
Yale University — New Haven, CT.
Thesis research on the Bates ^{12}C Parity Expt. Advisor: Prof. Vernon Hughes.

Undergraduate Honors Research Associate — 1980-1981
Texas A&M University — College Station, Texas
Light polarization measurements in ion-atom scattering. Advisor: Prof. David Church.

Teaching Experience

Adjunct Professor — Sept 2007 - present
Old Dominion University — Norfolk, VA
Physics class instructor

Adjunct Professor — Jan 2005 - present
Thomas Nelson Community College — Hampton, VA
Physics class instructor

Teaching Assistant — 1981-1982
Yale University — New Haven, CT
Taught physics labs.

Undergraduate Teaching Assistant — 1979-1981
Texas A&M University — College Station, Texas
Math Recitation (2 semesters), Physics Lab (1 semester)

Honors and Awards

Outstanding Physics Student, Texas A&M, 1981.

Outstanding Student, College of Science, Texas A&M, 1981.

Undergraduate Honors Thesis Award, Texas A&M, 1981.

Talks since Sept 2018

"Electroweak measurements of Neutron Skins" invited talk at the SSNET 2022 conference.

Seminar about CREX at JLab, October 2021.

"JLab Parity Review" invited talk at the INT Workshop on Weak Elastic Scattering from Nuclei, Mar 2019.

"PREX and CREX" invited talk at the NuSYM Conference, Sept 2018.

Organizing Committee Service

Co-organizer of the C-REX Workshop at JLab, March 2013.

Experiments on which I am a Spokesperson

"The ^{48}Ca Radius Experiment C-REX", co-spokespersons Paul Souder, Juliette Mammei, Dustin McNulty, Seamus Riordan, Silviu Covrig, Kent Paschke.

"PREX-II: Lead Radius Experiment", co-spokespersons Paul Souder, Krishna Kumar, Kent Paschke, and Guido Urciuoli.

"The Lead Radius Experiment PREX-I", co-spokespersons Paul Souder, Krishna Kumar, and Guido Urciuoli.

"Parity Violation in Deep Inelastic Scattering" co-spokespersons Xiaochao Zheng and Paul Reimer

"Parity Violation from ^{4}He at Low Q^2" co-spokesperson David Armstrong

Publications

(boldface = major contributor)

P. Achenbach *et al.* e-Print: 2303.02579

L. Jiang *et al.* Phys. Rev. D 107 (2023) 1, 012005.

S. Li *et al.* Nature 609 (2022) 7925, 41-45.

B. Duran *et al.* Nature 615 (2023) 7954, 813-816.

A. Karki *et al.* nucl-ex 2207.03850.

D. Bhetuwal *et al.* nucl-ex 2205.13495.

D. Adhikari *et al.* **Phys.Rev.Lett. 129 (2022) 4, 042501**

D. Ruth *et al.* Nature Phys. 18 (2022) 12, 1441.

L. Jiang *et al.* Phys. Rev. D 105, 112002.

F. Georges *et al.* Phys. Rev. Lett. 128 (2022) 25, 252002.

D. Androic *et al.* Phys. Rev. Lett. 128 (2022) 13, 132501.

D. Adhikari *et al.* **Phys. Rev. Lett. 128 (2022) 14, 142501.**

K.N. Suzuki *et al.* nucl-ex 2110.09104.

D. Abrams *et al.* Phys. Rev. Lett. 128 (2022) 13, 132003.

D. Androic *et al.* Phys. Rev. C 104 (2021) 014606.

V. Sulkosy *et al.* Nature Phys. 17 (2021) 6, 687-692. Nature Phys. 18 (2022) 4, 473 (erratum).

M.E. Christy *et al.* Phys. Rev. Lett. 128, 10, 102002 (2022).

D. Adhikari *et al.* **Phys. Rev. Lett. 126 (2021) 17, 172502.**

L. Gu *et al.* Phys. Rev. C 103, 034601 (2021).

B. Pandy *et al.* Phys.Rev.C 105 (2022) 5, L051001.

D. Bhetuwal *et al.* Phys. Rev. Lett. 126, 8, 082301 (2021).

Carlos Yero *et al.* Phys. Rev. Lett. 125, 26, 262501 (2020).

D. Androic *et al.* Phys. Rev. Lett. 125, 11, 112502 (2020).

D. Nguyen *et al.* Phys. Rev. C 102, 064004 (2020).

M. Benali *et al.* Nature Phys. 16, 2, 191 (2020).

R. Cruz-Torres *et al.* Phys. Rev. Lett. 124, 21, 212501 (2020).

D. Androic *et al.* Phys. Rev. C 101, 5, 055503 (2020).

V. Sulkosky *et al.* Phys. Lett. B 805, 135428 (2020).

M. Murphy *et al.* Phys. Rev. C 100, 5, 054606 (2019).
E. Long *et al.* Phys. Lett. B 797, 134875 (2019).
S. Iqbal *et al.* arXiv:1905.00541 [nucl-ex] (2019).
H. Dai *et al.* Phys. Rev. C 99, 5, 054608 (2019).
F. Garibaldi *et al.* Phys. Rev. C 99, 5, 054309 (2019).
P. Gueye *et al.* Eur. Phys. J.A 56, 5, 126 (2020).
D. Androic *et al.* Nature 557 7704 (2018).
M. Mihovilovic *et al.* Phys. Lett. B 788, 117 (2019).
H. Dai *et al.* Phys. Rev. C 98, 1, 014617 (2018).
Z. Ye *et al.* Phys. Rev. C 97, 065204 (2018).
V. Sulkosky *et al.* Phys. Rev. C 96, 065206 (2017).
M. Defurne *et al.* Nature Commun. 8, 1408 (2017).
M. Mazouz *et al.* Phys. Rev. Lett 118, 22, 222002 (2017).
X. Yan *et al.* Phys. Rev. C 95, 035209 (2017).
M. Defurne *et al.* Phys. Rev. Lett. 117, 262001 (2016).
D. Abbott *et al.* Phys. Rev. Lett. 116, 214801 (2016).
D. Flay *et al.* Phys. Rev. D 94, 052003 (2016).
A. Rakhman *et al.* Nucl. Instrum. Metho. A822, 82 (2016).
R. Michaels arXiv:1511.07474 (2015).
M. Defurne *et al.* Phys. Rev. C 92, 055202 (2015).
Y.-W. Zhang *et al.* Phys. Rev. Lett. 115, 172502 (2015).
Y.-X. Zhao *et al.* Phys. Rev. C 92, 015207 (2015).
K. Chirapatpimol, *et al.*, Phys. Rev. Lett. 114, 19, 192503 (2015).
D. Wang *et al.* **Phys. Rev. C 91, 045506, 4 (2014).**
P. Solvignon *et al.* Phys. Rev. C 92, 015208 (2015).
R. Michaels, arXiv:1410.4514 (2014).
J. Benesch *et al.* arXiv:1411.4088 (2014).
M. Dalton *et al.* arXiv:1402.7028 (2014).
P. Monaghan *et al.* J. Phys. G 41, 105109 (2014).
D. Parno *et al.* Phys. Lett. B 744, 309 (2015).
T. Allison *et al.* Nucl. Instr. and Methods A781, 105 (2015).
G.M. Urciuoli *et al.* Phys. Rev. C91, 034308 (2015).
C. J. Horowitz *et al.* J. Phys. G 41, 093001 (2014).
M. Posik *et al.* Phys. Rev. Lett. 113, 022002 (2014).
J. Katich *et al.* Phys. Rev. Lett. 113, 022502 (2014).
C. J. Horowitz *et al.* **Eur. Phys. Journal A 50, 48 (2014).**
I. Korover *et al.* Phys. Rev. Lett. 113, 022501 (2014).
M. Mihovilovic *et al.* Phys. Rev. Lett. 113, 23 232505 (2014).
Y. Zhang *et al.* Phys. Rev. C 90, 055209 (2014).
K. Allada *et al.* Phys. Rev. C 89, 042201 (2014).
A. Camsonne *et al.* Phys. Rev. Lett. 112, 132503 (2014).
D. Wang *et al.* **Nature 506 67 (2014).**
Y. X. Zhao *et al.* Phys. Rev. C90, 055201 (2014).
D. Androic *et al.* Phys. Rev. Lett. 111, 141803 (2013).
R. Subedi *et al.* **Nucl. Instr. and Methods A724, 90 (2013).**
D. Wang *et al.* **Phys. Rev. Lett. 111, 082501 (2013).**
I. Pomeratz *et al.* Phys. Rev. Lett. 110, 242301 (2013).
R. Michaels *et al.***, Nuovo Cim. C035N04 27 (2012)**
S. Abrahamyan, *et al.***, Phys. Rev. Lett. 109, 192501 (2012).**
C. J. Horowitz *et al.* **Phys. Rev. C 85, 032501 (2012).**
S. Abrahamyan, *et al.* **PREX, Phys. Rev. Lett. 108, 112502 (2012).**
H. Fonvieille, *et al.* Phys. Rev. C 85 15210 (2012).
J. Huang, *et al.* Phys. Rev. Lett. 108, 052001 (2012).
Z. Ahmed, *et al.***, HAPPEX-3, Phys. Rev. Lett. 108, 102001 (2012).**

X. Qian *et al.* Phys. Rev. Lett. 107, 072003 (2011).
W.U. Boeglin *et al.* Phys. Rev. Lett. 107, 262501 (2011).
G. Ron, *et al.* Phys. Rev. C 84, 055204 (2011).
X. Zhan, *et al.* Phys. Lett. B 705, 59, (2011).
S. Ban, C. J. Horowitz and R. Michaels, J. Phys. G 39, 015104 (2012).
S. Abrahamyan, *et.al.* Phys. Rev. Lett. 107, 191804 (2012).
S.P. Malace, *et al.* Phys. Rev. Lett. 106 052501 (2011).
S. Riordan, *et al.* Phys. Rev. Lett. 105 262302 (2010).
E. Fuchey, *et al.* Phys. Rev. C83 025201 (2011).
J. Glister, *et al.* Phys. Lett. B697 194 (2011).
M. Paolone, *et al.* Phys. Rev. Lett. 105 072001 (2010).
M. Coman, *et al.* Phys. Rev. C81 052201 (2010).
I. Pomerantz *et al.* Phys. Lett B684 106 (2010).
E. Cisbani *et al.* Nucl. Instrum. and Meth. A4595 44 (2008).
F. Cusanno *et al.* Phys. Rev. Lett. 103 202501 (2009).
G. Laveissier *et al.* Phys. Rev. C79:015201 (2009).
R. Subedi *et al.* Science 320, 1476 (2008)
P. Solvignon *et al.* Phys. Rev. Lett. 101 182502 (2008).
K. Slifer *et al.* Phys. Rev. Lett. 101 022303 (2008).
M.I. Adamovich *et al.* Eur. Phys. J C52 857 (2007).
R. Michaels AIP Conf. Proc. 915 719 (2007)
R. Michaels, R. Carlini AIP Conf. Proc. 915 104 (2007).
M. Mazouz *et al.* Phys. Rev. Lett. 99 242501 (2007).
G. Ron *et al.* Phys. Rev. Lett. 99 202002 (2007).
M. Iodice *et al.* Phys. Rev. Lett. 99 052501 (2007).
A. Shahinyan *et al.* arXiv:0704.1830.
R. Schneor *et al.* Phys. Rev. Lett. 99 072501 (2007).
M.I. Adamovich *et al.* Eur. Phys. J C50 535 (2007).
X. Jiang *et al.* Phys. Rev. Lett. 98 182302 (2007).
A. Danagoulian *et al.* Phys. Rev. Lett 98 152001 (2007).
Y. Qiang *et al.* Phys. Rev. C75 055208 (2007).
J. Roche *et al.* nucl-ex/0609015
A. Acha *et al.* Phys. Rev. Lett. 98 032301 (2007).
C. Munoz Camacho *et al.* Phys. Rev. Lett. 97 262002 (2006).
B. Anderson *et al.* Phys. Rev. C 75 034003 (2007).
J.J. Kelly *et al.* Phys. Rev. C 75 025201 (2007).
B. Hu *et al.* Phys. Rev. C 73 064004 (2006).
M.I. Adamovich *et al.* Phys. Rev. C 72 055201 (2005).
K.A. Aniol *et al.* **HAPPEX, Phys. Lett. B 635 275 (2006).**
K.A. Aniol *et al.* **HAPPEX, Phys. Rev. Lett. 96 022003 (2006).**
K. Kramer *et al.* Phys. Rev. Lett. 95 142002 (2005).
J.J. Kelly *et al.* Phys. Rev. Lett. 95 102001 (2005).
P.L. Anthony *et al.* E158, Phys. Rev. Lett. 95 081601 (2005).
V. Punjabi *et al.* Phys. Rev. C 71 055202, Erratum ibid C 71 069902 (2005).
I.A. Qattan *et al.* Phys. Rev. Lett. 94 142301 (2005).
D. L. Hamilton *et al.* Phys. Rev. Lett. 94 242001 (2005).
M.I. Adamovich *et al.* Eur. Phys. J. C36 315 (2004).
Y.L. Zhu *et al.* Phys. Rev. C 71 044603 (2005).
M.M. Rvachev *et al.* Phys. Rev. Lett. 94 192302 (2005).
J.L. Alcorn *et al.* Nucl. Instrum. and Meth. A522 294 (2004).
F. Benmokhtar *et al.* Phys. Rev. Lett. 94 082305 (2005).
M. Amarian *et al.* Phys. Rev. Lett. 93 152301 (2004).
J. Gao *et al.* Phys. Rev. Lett. 84 3265 (2000).
M.I. Adamovich *et al.* Phys. Rev. C 70 022201 (2004).

X. Zheng *et al.* Phys. Rev. C 70 065207 (2004).
G. Laveissiere *et al.* Phys. Rev. Lett. 93 122001 (2004).
M.I. Adamovich *et al.* Eur. Phys J C32 221 (2004).
K.G. Fissum *et al.* Phys. Rev. C 70 034606 (2004).
K.A. Aniol *et al.*, **HAPPEX, Phys. Rev. C 69 065501 (2004).**
P.L. Anthony *et al.* E158, Phys. Rev. Lett. 92 181602 (2004).
X. Zheng *et al.* Phys. Rev. Lett. 92 012004 (2004).
G. Laveissiere *et al.* Phys. Rev. C 69 045203 (2004).
D. Dutta *et al.* Phys. Rev. C 68 021001 (2003).
M.I. Adamovich *et al.* Eur. Phys J C26 357 (2003).
S. Strauch *et al.* Phys. Rev. Lett. 91 052301 (2003).
L.Y. Zhu *et al.* Phys. Rev. Lett. 91 022003 (2003).
P.E. Ulmer *et al.* Phys. Rev. Lett. 89 062301 (2002)
E.C. Schulte *et al.* Phys. Rev. C 66 042201 (2002).
K. Wijesooriya *et al.* Phys. Rev. C 66 034614 (2002).
X. Wu *et al.* Phys. Rev. C 67 012201 (2003).
M. Amarian *et al.* Phys. Rev. Lett. 89 242301 (2002).
M.I. Adamovich *et al.* Phys. Rev. C 65 042202 (2002).
M.I. Adamovich *et al.* Eur. Phys. J C22 255 (2001).
M.I. Adamovich *et al.* Eur. Phys. J C22 47 (2001).
K.G. Fissum *et al.* Nucl. Instrum. and Meth. A474 108 (2001).
O. Gayou *et al.* Phys. Rev. Lett. 88 092301 (2002).
F. Xiong *et al.* Phys. Rev. Lett. 87 242501 (2001).
K. Wijesooriya *et al.* Phys. Rev. Lett. 86 2975 (2001).
O. Gayou *et al.* Phys. Rev. C 64 038202 (2001).
N. Liyanage *et al.* Phys. Rev. Lett. 86 5670 (2001).
S. Malov *et al.* Phys. Rev. C 62 057302 (2000).
K.A. Aniol *et al.* **HAPPEX, Phys Lett. B 509 211 (2001).**
C.J. Horowitz, S.J. Pollock, P.A.Souder, and R. Michaels, Phys. Rev. C 63 025501 (2001).
W. Xu *et al.* Phys. Rev. Lett. 85 2900 (2000).
M.K. Jones *et al.* Phys. Rev. Lett. 84 1398 (2000).
M.I. Adamovich *et al.* Eur. Phys. J C13 247 (2000).
M.I. Adamovich *et al.* Eur. Phys. J C11 271 (1999).
M.I. Adamovich *et al.* Eur. Phys. J C8 59 (1999).
L.C. Alexa *et al.* Phys. Rev. Lett. 82 1374 (1999).
K.A. Aniol *et al.* **HAPPEX, Phys. Rev. Lett. 82 1096 (1999).**
W. Bruckner *et al.* Nucl. Instrum. and Meth. A378 451 (1996).
M.I. Adamovich *et al.* Eur. Phys. J C8 593 (1999).
M.I. Adamovich *et al.* Eur. Phys. J C5 621 (1998).
M.I. Adamovich *et al.* Zeit. Phys. C 76 35 (1997).
M.I. Adamovich *et al.* Phys Lett B 358 151 (1995).
M.I. Adamovich *et al.* Zeit. Phys A 350 379 (1995).
U. Muller *et al.* Nucl. Instrum. and Meth. A343 279 (1994).
K. Martens *et al.* Nucl. Instrum. and Meth. A343 258 (1994).
H.W. Siebert *et al.* Nucl. Instrum. and Meth. A343 60 (1994).
W. Beusch *et al.* Nucl. Instrum. and Meth. A323 373 (1992).
W. Bruckner *et al.* Nucl. Instrum. and Meth. A313 429 (1992).
W. Bruckner *et al.* Nucl. Instrum. and Meth. A313 345 (1992).
P.A. Souder *et al.* **Phys. Rev. Lett. 65 694 (1990).**